

# PATENT COOPERATION TREATY



# PCT

REC'D 11 NOV 2005

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY PCT

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PA135563/PCT	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. PCT/IB2004/001861	International filing date (day/month/year) 08.06.2004	Priority date (day/month/year) 04.07.2003
International Patent Classification (IPC) or national classification and IPC G01N33/00		
Applicant SCHAUENBURG FLEXADUX (PTY) LTD et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 3 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 04.05.2005	Date of completion of this report 10.11.2005	
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Purdie, D  Telephone No. +49 89 2399-2187 	

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/IB2004/001861

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## Box No. I Basis of the report

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
    - ☐ international search (under Rules 12.3 and 23.1(b))
    - ☐ publication of the international application (under Rule 12.4)
    - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

### Description, Pages

1-9 as originally filed

### Claims, Numbers

1-13 filed with telefax on 04.05.2005

### Drawings, Sheets

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
    - ☐ the description, pages
    - ☐ the claims, Nos.
    - ☐ the drawings, sheets/figs
    - ☐ the sequence listing (*specify*):
    - ☐ any table(s) related to sequence listing (*specify*):
  4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
    - ☐ the description, pages
    - ☐ the claims, Nos.
    - ☐ the drawings, sheets/figs
    - ☐ the sequence listing (*specify*):
    - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/IB2004/001861

**Box No. V    Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2-13
	No: Claims	1
Inventive step (IS)	Yes: Claims	
	No: Claims	1-13
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following documents:

D1: US-A-2001/0040509

D2: US-A-5 771 004

D3: US-A-4 875 031

D4: EP-A-0 533 247

Document D1 discloses a gas monitoring apparatus comprising a sensor module (see Figs. 7 and 14) and a display module (see Fig. 6 and para 0078), the sensor module comprising:

- a first housing (see Figs. 7 and 14 and para 0090-0091);
- a gas sensor in said first housing (see Fig. 14);
- measurement means in said first housing responsive to said gas sensor to generate an output indicative of a measured gas concentration (see Fig. 14); and
- a wireless transmitter in said first housing arranged to transmit signals indicative of the measured gas concentration (see Fig. 14);

the display module comprising:

- a second housing (housing 60);
- a wireless receiver in said second housing arranged to receive the signals indicative of the measured gas concentration (receiver 74); and
- a display supported by said second housing for displaying the measured gas concentration (display 70).

The first and second housings disclosed in D1 are certainly connectable releasably together: they could be connected releasably by using a length of string, for example. Furthermore, the first and second housings are electrically isolated from one another (see Fig. 3), and clearly whether the display module and the sensor module are connected together or physically separated has no effect on the operability of the apparatus.

Claim 1 is therefore not novel over D1.

The subject-matter of claim 1 is also not inventive over the disclosure in D2 (see Fig. 1). D2 does not disclose a display module comprising a display for displaying measured gas concentration, although a visual signal of the measured gas concentration is disclosed (col. 3, lines 42-46). Furthermore, the placement of this "visual signal" at a remote communication device (corresponding to the display module of claim 1) is obvious from the teaching of D3 (see col. 3, lines 42-57).

Claim 1 is also not inventive over D3. D3 (Fig. 9 and col. 15, lines 26-34) discloses a sensing module comprising a housing (implicit), a gas sensor (see Fig. 9); measurement means (Fig. 9) and a transmitter (Fig. 9). D3 also discloses a display for displaying the measured gas concentration (col. 11; lines 45-48) and it is considered obvious to place this together with a housing and a wireless receiver in a display module which communicates with the transmitter of Fig. 9.

None of the dependent claims 2-13 appear to contain patentable subject-matter. Claims 2-5 and 9-13 appear to be obvious design options. Inductive charging of batteries (claims 6 and 7) is well known (see, for example, D4, col. 2, lines 34-52).

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**CLAIMS**

1. Gas monitoring apparatus comprising a sensor module and a display module, the sensor module comprising:

a first housing;

at least one gas sensor in the first housing;

measurement means in the first housing responsive to said at least one gas sensor to generate an output indicative of a measured gas concentration; and

a wireless transmitter in the first housing arranged to transmit signals indicative of the measured gas concentration;

the display module comprising:

a second housing;

a wireless receiver in the second housing arranged to receive the signals indicative of the measured gas concentration; and

a display supported by the second housing for displaying the measured gas concentration.

wherein the first and second housings are connectable releasably together but are electrically isolated from one another, so that the apparatus can be operated with the display module and the sensor module connected together or physically separated.

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2. Gas monitoring apparatus according to claim 1 wherein the transmitter in the first housing and the receiver in the second housing are a radio transmitter and receiver.
3. Gas monitoring apparatus according to claim 2 wherein the transmitter and receiver employ spread spectrum techniques.
4. Gas monitoring apparatus according to any one of claims 1 to 3 which is battery powered, by respective batteries in the first and second housings.
5. Gas monitoring apparatus according to claim 4 wherein the batteries are rechargeable, at least the first housing being provided with terminals receivable in a charger to charge the battery or batteries in both housings.
6. Gas monitoring apparatus according to claim 5 which is arranged so that the battery or batteries in the first housing are charged simultaneously with the battery or batteries in the second housing when the two housings are connected together.
7. Gas monitoring apparatus according to claim 6 wherein energy transfer means are provided on the respective housings to transfer sufficient energy from the first housing to the second housing to charge the battery or batteries in the second housing, without requiring electrical contact between the housings.
8. Gas monitoring apparatus according to claim 7 wherein a light source is provided in the first housing, arranged to be activated when the first housing is received in a charger, and a photovoltaic cell is provided on the second housing, the light source and the photovoltaic cell being located adjacent one another when the two housings are connected.

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9. Gas monitoring apparatus according to any one of claims 1 to 8 wherein the sensor module is arranged to transmit standard data signals to an associated display module and a broadcast signal to a plurality of display modules.
10. Gas monitoring apparatus according to claim 9 wherein the measurement means in the sensor module defines a gas concentration threshold, data signals indicating a gas concentration exceeding the gas concentration threshold being transmitted as broadcast signals.
11. Gas monitoring apparatus according to claim 10 wherein the measurement means is adjustable to permit the gas concentration threshold to be adjusted.
12. Gas monitoring apparatus according to any one of claims 1 to 11 wherein either the sensor module can be designated as a master module that controls a communication protocol between itself and a plurality of display modules, or vice versa.
13. Gas monitoring apparatus according to any one of claims 1 to 12 wherein the display module transmits the signals indicative of the measured gas concentration to at least one reader.

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